Claims

1. A fuel injector (18) for injecting fuel into a combustion chamber of an internal combustion engine, having a pressure booster (3) whose booster piston (4) separates a working chamber (5), which is continuously acted on with fuel by means of a pressure source (1, 2), from a differential pressure chamber (6) that can be pressure-relieved; a pressure change in the differential pressure chamber (6) occurs via an actuation of a servo-valve (22) whose control chamber (36) can be pressure-relieved by means of an on/off valve (32) that also opens or closes a hydraulic connection (21, 38, 30) of the differential pressure chamber (6) to a first return (30) on the low-pressure side, characterized in that in the deactivated state of the pressure booster (3), a first sealing seat (24) seals a return (30) on the low-pressure side off from a high-pressure region of the servo-valve (22), which region is comprised of the control chamber (36), a first hydraulic chamber (37), and a second hydraulic chamber (38).

2. The fuel injector according to claim 1, characterized in that the servo-valve (22) is actuated by means of the on/off valve (32) that connects the control chamber (36) to a second return (31).

3. The fuel injector according to claim 1, characterized in that the control chamber (36) of the servo-valve (22) and the first hydraulic chamber (37) are connected to a pressure source (1) via the working chamber (5) of the pressure booster (3).

4. The fuel injector according to claim 1, characterized in that the second hydraulic chamber (38) communicates with the differential pressure chamber (6) via a discharge line (21) that can connect them to a first return (30) on the low-pressure side.

5. The fuel injector according to claim 4, characterized in that the servo-valve piston (23, 46) has a first sealing seat (24) that or closes the first return (30) and a second sealing seat (25) that opens or closes the first hydraulic chamber (37).

6. The fuel injector according to claim 5, characterized in that the first sealing seat (24) is embodied in the form of a flat seat or a conical seat (40).

7. The fuel injector according to claim 5, characterized in that the first sealing seat (24) is embodied in the form of a conical seat or slider seal.

8. The fuel injector according to claim 5, characterized in that the second sealing seat (25) is embodied in the form of a conical seat (29, 33).

9. The fuel injector according to claim 5, characterized in that the second sealing seat (25) is embodied in the form of a slider seal (43, 44, 45).

10. The fuel injector according to claim 4, characterized in that the servo-valve piston (23) has a section encompassed by the second hydraulic chamber (38), which section has an annular surface (34) that is acted on by a residual pressure that moves the servo-valve piston (23) toward its second sealing seat (25) when the first sealing seat (24) is open.

11. The fuel injector according to claim 6, characterized in that the servo-valve piston (23), along with a first sealing seat (24) embodied with a flat seat design, is accommodated in a valve body (26; 27, 28) with a two-part design that compensates for an axial offset.

12. The fuel injector according to claim 5, characterized in that the servo-valve piston (23, 46) is embodied in a one-piece form.